CONNECTED NATION®

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January 27, 2009

Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: GN Docket Nos. 09-47, 09-51, and 09-137; Reply Comments of Connected Nation, Inc. in response to NBP Public Notice # 30

Dear Ms. Dortch,

In response to NBP Public Notice #30, please find attached a document containing a summary of Connected Nation's research and activities relevant to FCC proceedings 09-47 (International Comparison and Consumer Survey Requirements in the Broadband Data Improvement Act); 09-51 (A National Broadband Plan for Our Future); and 09-137 (Inquiry Concerning the Deployment of Advanced Telecommunications Capability To All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act) that seek, in part, to support and build upon Connected Nation's previous comments on the National Broadband Plan.

Sincerely,

Laura Taylor
Chief Policy Officer
Connected Nation, Inc.

Attachment

Comments to National Broadband Plan #30

TABLE OF CONTENTS

Introduction

During the comment cycle opened by the FCC in connection with the National Broadband Plan proceeding ("NBP"), Connected Nation filed 10 comments offering insights stemming from our archive of state-specific survey research on consumer trends in broadband adoption. [1] These comments address a myriad of issues regarding what drives and prevents adoption of broadband services across different demographic groups, including people with disabilities, minorities, families with children, library patrons, and among rural residents and businesses. Connected Nation's comments are based on our years of experience working with communities and states to address the challenges of expanding broadband to all citizens, particularly those who are currently disconnected. Connected Nation is a non-for-profit organization working to build public-private partnerships to ensure that broadband access is available to and increasingly used by all Americans.

Our mission starts with business and residential survey research to help us understand which residents and businesses are adopting broadband services, which are not, and how this technology is already affecting people's lives and businesses. Our goal in these filings is to share key findings of this research with the FCC policy makers and others in the hope that this rich data will help inform our national broadband policy. In this briefing we present an overview of some of the key insights that stem from these filings.

A. Who is Lagging Behind Digital Adoption and Why?

Connected Nation's data collected across several states offers a general understanding of who is adopting broadband technologies and who is not, and what are the key barriers to adoption experienced by this latter group. Consistent with other data sources on broadband adoption trends, Connected Nation's 2007-2008 data from the states of Ohio, Tennessee, and Kentucky systematically reflects that the digital divide is particularly problematic among certain demographic groups. While state-wide broadband adoption rates in Tennessee, Kentucky, and Ohio were estimated at 50% in 2008, only 25% of citizens over the age of 65, 23% of households earning less than $25,000 per year, 24% of adults with disabilities, 33% of adults with no college education, 45% of African-American households, 32% of low-income households with children, and 38% of rural households subscribe to home broadband service (Figure 1).[2]

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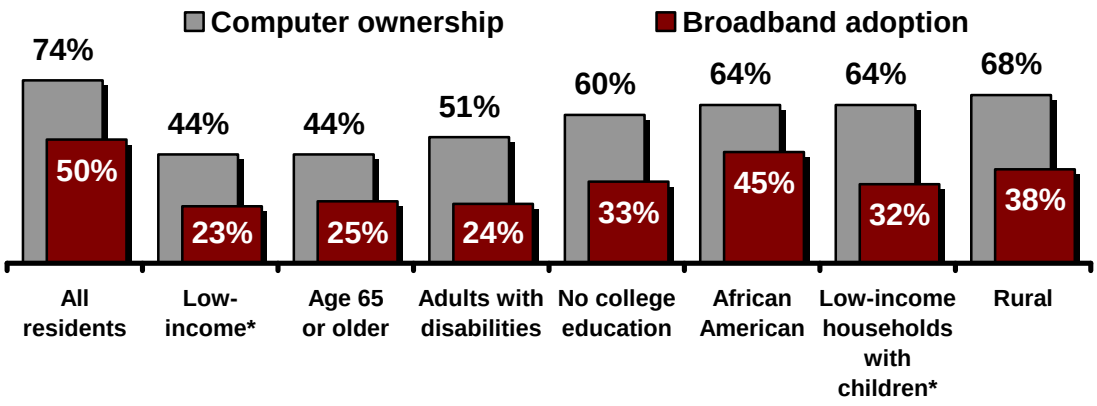
[1] *Connected Nation's NBP Comments –*
Telework- *http://fjallfoss.fcc.gov/ecfs/document/view?id=7020039177*
Disabilities- *http://connectednation.org/_documents/ConnectedNationPolicyBriefTheCalltoConnectAmericanswithDisabilities.pdf*
Libraries- *http://fjallfoss.fcc.gov/ecfs/document/view?id=7020243836*
E-Gov- *http://fjallfoss.fcc.gov/ecfs/document/view?id=7020347166*
Adoption- *http://connectednation.org/_documents/ConnectedNationresponseNBPNo16BroadbandAdoptionFINAL11_2009.pdf*
Healthcare- *http://connectednation.org/_documents/ConnectedNationresponseNBPNo.17Healthcare12_2009.pdf*
Rural America- *http://connectednation.org/_documents/AFBF-CNresponseNBPNo.18EconomicOppFINAL12_2009.pdf*
USF & IC- *http://connectednation.org/_documents/ConnectedNationCommentsNo.19USFCombined.pdf*
Economy- *http://connectednation.org/_documents/CNReplyCommentsNBPNo.18EconOpportunity12_2009.pdf*
Education- *http://connectednation.org/_documents/CN-NCBCP-BWResponsetoNBPNo.15-Education12_2009.pdf*
[2] *Connected Nation's NBP Comments – Broadband Adoption* and *Consumer Insights into American Broadband Challenges: A Connected Nation Policy Brief.*

Figure 1
Low Adoption Demographics

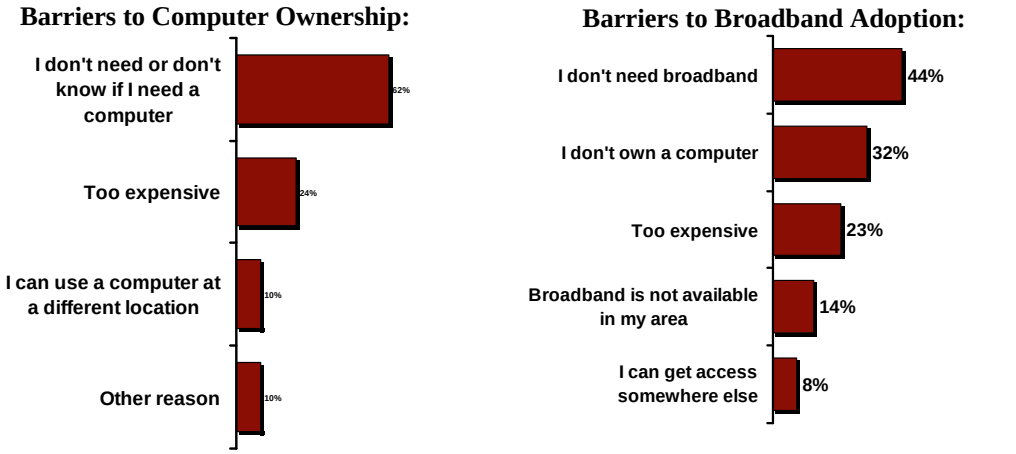


Q: Does your household have a computer?
Q: Which of the following describe the type of Internet service you have at home?
n = 3,005 residents in Ohio, Tennessee and Kentucky

*Low-income here is defined as annual household income less than $25,000

The largest barrier to broadband adoption among adults who do not subscribe to broadband service in the home is a lack of awareness about the technology's benefits. Nearly one-half (44%) of those with no home broadband connection say, "I don't need broadband." Likewise, the top barrier to computer ownership is also a perceived lack of need. Nearly two-thirds (62%) of those who do not own a computer say, "I don't need a computer," and 24% of those who do not own a computer cite the up-front cost as a barrier. Similarly, nearly one-fourth of those without a home broadband connection say broadband is too expensive (Figure 2).[3]

Figure 2



Q: Why don't you have a computer at home?
n = 795 residents in Ohio, Tennessee and Kentucky

Q: Why don't you subscribe to broadband Internet service?
n = 1,494 Ohio, Tennessee and Kentucky residents without

Source: 2007-2008 Residential Technology Assessments for Kentucky.

Barriers to adoption of broadband service across different demographic groups follow a similar pattern. Forty-one percent of parents with children who are without a home computer see no need

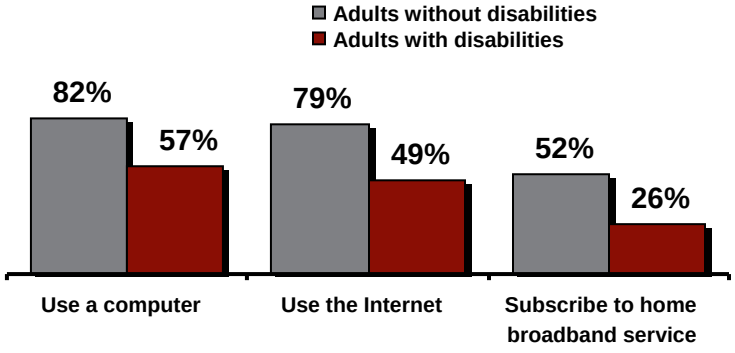
[3] Ibid, page 7.

for having a computer in the home and 30% of parents with children who do not have a home broadband connection see no need for a broadband connection. Further, 56% of people with disabilities who do not own a computer see no need for having a computer in the home and 40% of people with disabilities who do not have a home broadband connection see no need for a broadband connection. Forty-two percent of rural residents without a home broadband connection say it is because they do not need broadband.[4] Across several filings contributing to the NBP debate, Connected Nation was able to drill down further into patterns of adoption and use by these demographic groups.

B. Broadband Technology Among Americans with Disabilities

Connected Nation's October 5, 2009,filing regarding broadband as it affects people with disabilities indicates that adults with disabilities are falling behind the general population in the adoption of broadband technology. Despite the opportunities that a computer and broadband Internet access can provide adults with disabilities, only 57% of respondents with disabilities in Kentucky, Tennessee, and Ohio use a computer compared to 82% for the overall population, and only 26% subscribe to broadband compared to a rate of 52% across the three states under research (Figure 3).[5]

Figure 3
Technology Adoption



Source: 2007-2008 Residential Technology Assessments of KY, TN, and OH
n=2,810 KY, TN, and OH adults without disabilities and
n=195 KY, TN, and OH adults with disabilities

Extrapolating this pattern to the national population, this translates into 23.4 million Americans with disabilities who lack broadband service at the home. Lack of computer ownership and perceived value of the service are the key barriers to broadband adoption for this demographic, suggesting that this group would be most impacted by policies aimed to address these demand-side barriers to broadband adoption.[6]

Broadband is an important tool that is starting to revolutionize healthcare delivery and, as such, broadband presents a particular opportunity to affect the lives and livelihood of people with

[4] Ibid, page 11.
[5] *Connected Nation's NBP Comments – Adults with Disabilities*, page 1.
[6] Ibid.

disabilities. In 2009, 72% of broadband subscribers who obtain healthcare information online in Ohio and Tennessee claim that it has empowered them to be healthier (Figure 4). Forty-seven percent of broadband subscribers who obtain healthcare information online report that obtaining this information online has prevented trips to the doctor, a hospital, or a medical center (Figure 5).[7] Such healthcare-related benefits stemming from broadband are particularly relevant to people with disabilities. Policies that specifically target the millions of Americans with disabilities that remain disconnected should be a key outcome of our National Broadband Policy.

Figure 4
"Obtaining healthcare information online has empowered me to be healthier"

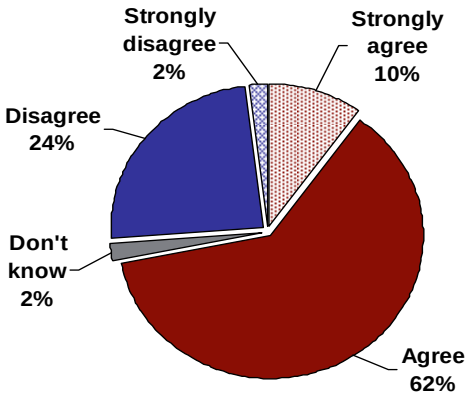
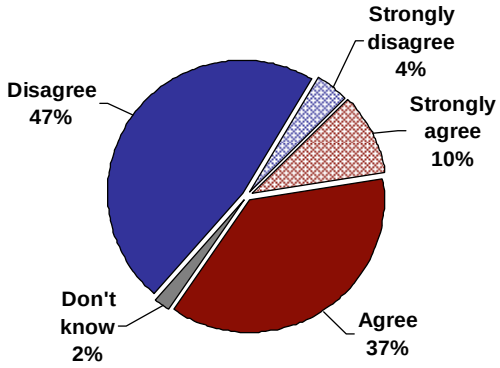


Figure 5
"Obtaining healthcare information online has prevented trips to my healthcare provider"



n=191 respondents with broadband service at home who obtain healthcare information online or communicate with healthcare providers

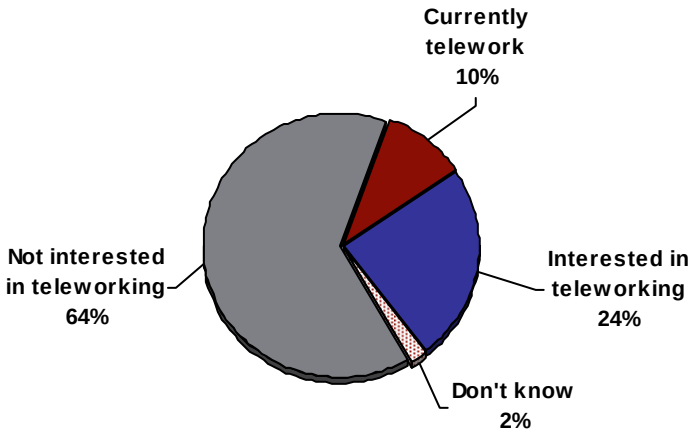
[7] *Connected Nation's NBP Comments – Healthcare.*

C. Telework in America

Broadband is critical infrastructure, necessary to maintain economic stability and encourage economic growth. Several studies have shown that with a solid broadband foundation, America's opportunities for economic growth will quickly improve. Connected Nation's October 22, 2009, filing demonstrates that as the United States becomes ever more reliant on broadband, a key economic opportunity for our nation is emerging – Americans working from home through a broadband connection, commonly known as teleworking.

Residential surveys conducted by Connected Nation in Kentucky, Tennessee, and Ohio from 2007-2008 show that while 10% of employed adults currently telework, an additional 24% of employed adults who do not currently telework would be interested in doing so if they were empowered to telework (Figure 6).[8] Nationally, this would equate to nearly 35 million potential teleworkers, for a total of 49.5 million or 34% of the employed adult population.[9]

Figure 6
Interest in Teleworking Among Employed Adults



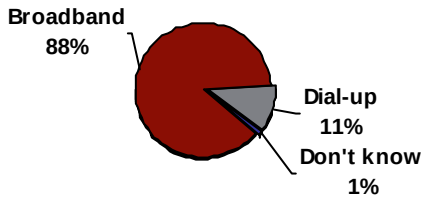
Based on employed civilian labor force of 145.5 million, reported by the US Bureau of Labor Statistics for Q3, 2008 (www.bls.gov)

While it is impossible to reduce the entire teleworking population down to a "typical" teleworker, Connected Nation's survey research enable us to create a profile of the current teleworking population. The vast majority of teleworkers rely on their home broadband connection to work from home (Figure 7),[10] once again showing how important broadband adoption is to the growth in teleworking.

[8] *Connected Nation's NBP Comments – Telework,* page 9.
[9] Ibid.
[10] Ibid, page 11.

Figure 7
Teleworkers by Internet Connection

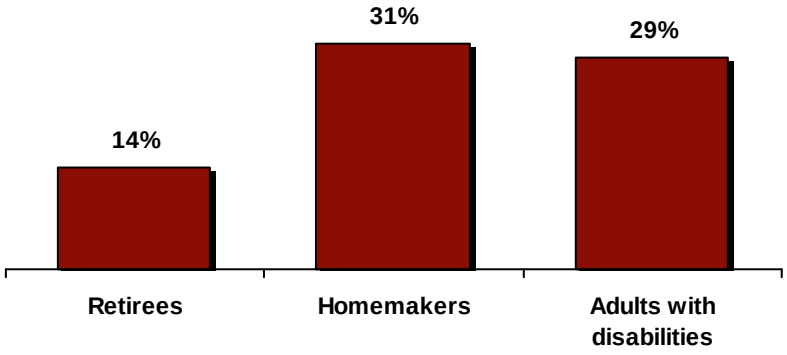
n=170 teleworkers in Tennessee and Ohio (Source: 2008 Connect Ohio and July 2008 Connected Tennessee Residential Technology Assessments).



Telework becomes an enabler for non-working Americans by transforming employment into something that is compatible with the realities in their lives. Fourteen percent of retirees, 31% of homemakers, and 29% of adults with disabilities said they would be willing to join the workforce if they could telework through a broadband connection (Figure 8).[11]

Figure 8
Likely to Telework Via Broadband

n=1,238 KY, TN, and OH adults not currently employed in the labor force (from 2007-2008 ConnectKentucky, Connected Tennessee and Connect Ohio Residential Technology Assessments).



If we assume that new teleworkers earn the national average income, these new teleworkers would create an additional $739 billion income earnings annually.[12] That includes over $163 billion for retirees, $103 billion for homemakers, and $166 billion that would be earned by adults with disabilities each year.

In order to benefit from this growth in teleworking, though, America needs to place a high priority on increasing both the availability and the adoption of home broadband service. Nearly nine out of ten teleworkers rely on a broadband connection to work from home, and the broadband connection

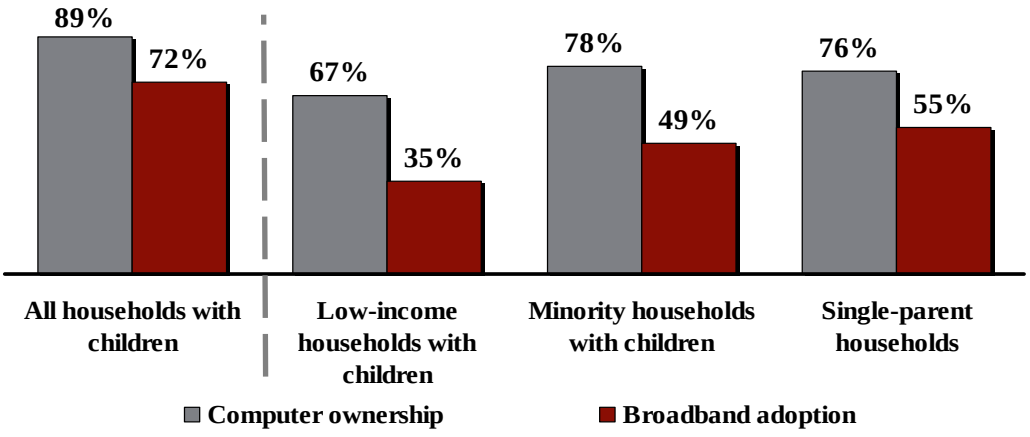
[11] Ibid, page 17.
[12] Based on the 2008 mean annual income of $42,270, as reported by the United States Bureau of Labor Statistics (http://www.bls.gov/oes/current/oes_nat.htm).

speeds of teleworkers are significantly higher than the average broadband user.[13] Because of the benefits that accompany ubiquitous broadband availability and adoption, highlighting the benefits of teleworking has rightfully been recognized as a key component of the Commission's National Broadband Plan. The first step is for the Commission to strive for a fast, reliable, secure broadband infrastructure by addressing both supply and demand barriers to provide broadband for every American community. Connected Nation's research has shown that teleworking can provide new opportunities for the American workforce, but to do so, home broadband availability and adoption must both increase in order to realize the full potential growth.

D. Impact of Broadband Among Low Income, Minority and Rural Households with Children and its Implications for e-Education Policy

As Figure 1 above reports, low income households and minority households with children present in the home are statistically less likely to use broadband services, despite the fact that the presence of children in the home is shown to be a driver for adoption of computer and broadband services.[14] Figure 9 below reports broadband technology adoption in Tennessee and Ohio during 2009 among households with children in the home from different demographic groups. While 72% of all households with children subscribe to home broadband service – a figure much higher than the national average across all households - our data suggest that only 35% of low-income households with children living at home say they subscribe to broadband. Further, 49% of minority households with children, and only 55% of single-parent households, report that they subscribe to home broadband service.[15]

Figure 9
Technology adoption among households with children



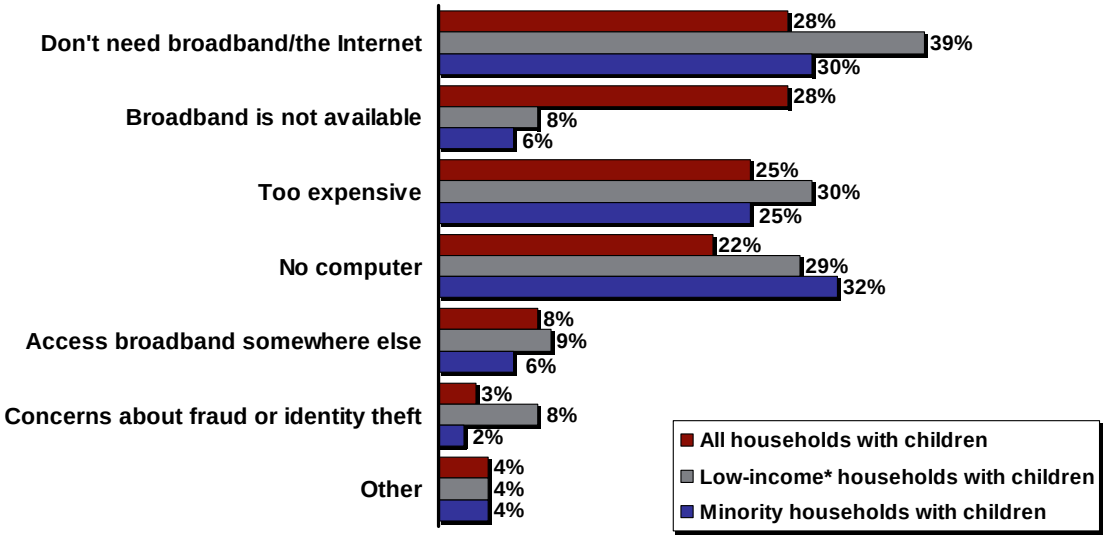
n=244 Tennessee and Ohio residents with children living at home who do not subscribe to home broadband service.

A comparison across reported barriers to broadband adoption in Tennessee and Ohio among low-income and minority households with children and the average household with children reveals differences that have policy implications. Figure 11 reports that while the key barriers to broadband usage among all households with children is a lack of perceived need and lack of broadband availability (among 28% of all household with children respondents), the top barriers to adoption of

[13] Ibid, page 11.
[14] *Consumer Insights into American Broadband Challenges: A Connected Nation Policy Brief*, page 6.
[15] *Connected Nation's NBP Comments – Education,* page 7.

broadband service among low-income and minority households with children are a perceived lack of need, a lack of home computer ownership, and affordability of the service (Figure 10).[16] These data suggest that key policy strategies affecting these demographic groups are those focused on ameliorating the barriers to computer and broadband adoption, as well as addressing the affordability of the service.

Figure 10
Barriers to Broadband Adoption



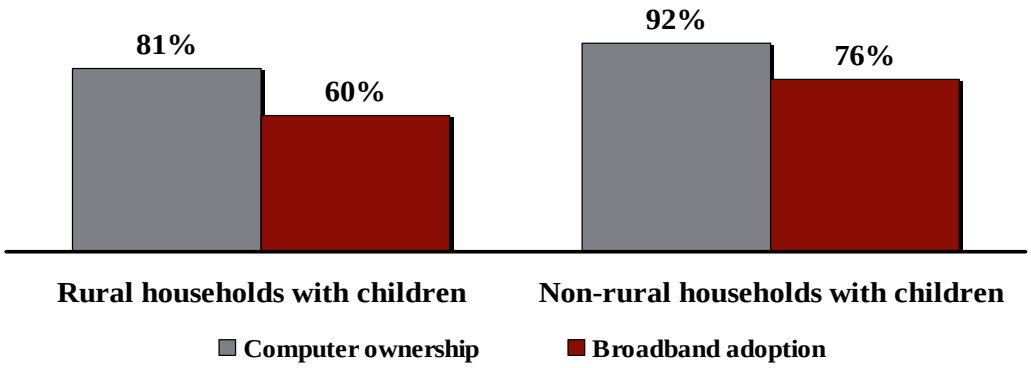
*Low-income=households with annual incomes less than $25,000
n=244 Tennessee and Ohio residents with children living at home who do not subscribe to home broadband service, 77 of whom are low-incomemand 63 of whom are minority.

Source: 2009 Residential Technology Assessments
in Tennessee and Ohio

Rural households with children also lag behind non-rural counterparts in computer and broadband adoption (Figure 11). Rural households with children are less likely to own a computer (81% of rural households, compared to 92% of non-rural households) and only 60% of rural households with children subscribe to home broadband service, compared to 76% of their non-rural counterparts.[17]

[16] Ibid, pages 8 and 9.
[17] Ibid, page 11.

Figure 11
Technology adoption among rural households with children

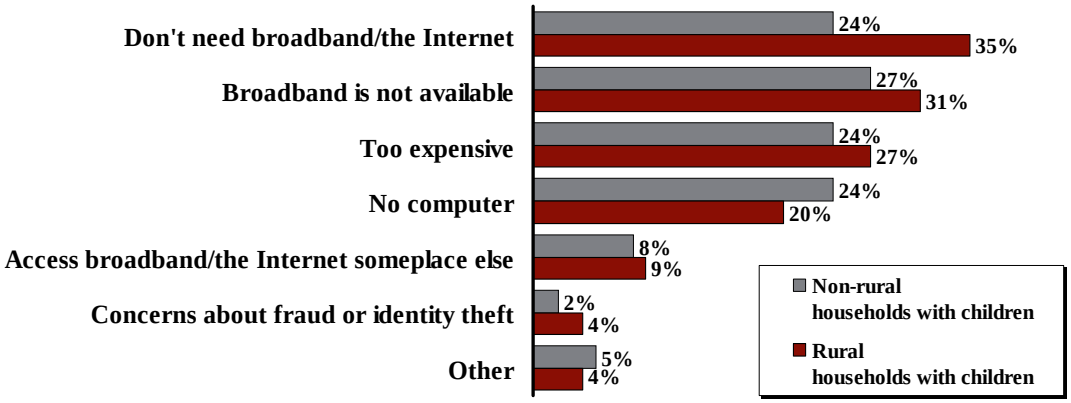


See Corey Murray, Translation Tool Tackles Language Barrier: Grant Program uses IBM Technology to Help Schools Translate E-Mails, Web Sites, *eSchools News* (March 29, 2007), available at http://www.eschoolnews.com/news/top-news/index.cfm?i=45788&CFID=2844512&CFTOKEN=46694510 (last visited September 1, 2009) ([this technology program is being used to] "teach members of the Hispanic community about computers, show English-language learners how to conduct online research, better engage parents in their children's education, and encourage ESL students to share their language--and their heritage--with their English-speaking friends.")

A comparison of barriers to broadband adoption across rural and non-rural households with children who do not subscribe to broadband indicates, as one might expect, that not having broadband available at the point of residence is a barrier among rural dwellers (31% of rural households with children who do not subscribe to broadband indicate that broadband availability is a factor, compared to 27% of non-rural households with children who do not subscribe to broadband). Less predictably, data reveals that lack of perceived need and affordability of the service present greater barriers to adoption of broadband service for rural households with children than their counterpart in non-rural areas. This suggest that while policies that address network infrastructure expansion in unserved areas will have an impact among this demographic group, policies that promote awareness of the value proposition of the service, affordability, and other barriers to adoption will also have an important impact among rural households with children (Figure 12).[18] In other words, many rural children need to have broadband made available where they live. However, rural children, like many of their non-rural counterparts, will also benefit from policies that directly address endemic barriers to broadband adoption, such as awareness of the value proposition, computer ownership, and affordability of the service.

[18] Ibid, page 12.

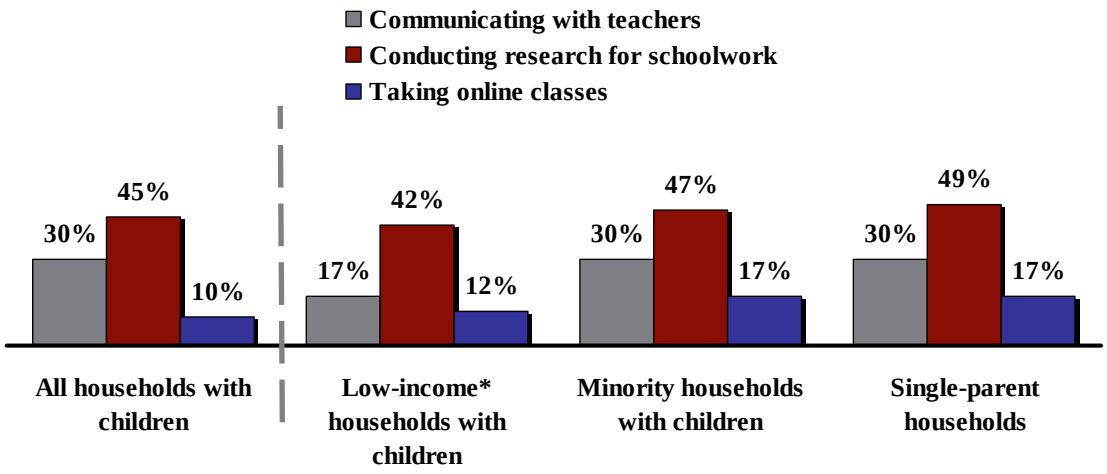
Figure 12
Barriers to broadband adoption among rural households with children



2009 Residential Technology Assessments of Ohio and Tennessee. n=858 OH and TN residents who have children living at home.

These data have important repercussions for the national discussion of how broadband access is affecting the education of children today in America. In particular, the data reveals that today some American children do not have the means to enjoy the online educational tools that other American children have readily available in their homes. As online educational applications continue to take hold among children across our nation it is imperative that policy makers address this imbalance. Failure to do so will imply lesser opportunities for development and economic potential for those children who are experiencing digital exclusion, including those in low-income, minority, and rural households and others, who are often unaware of what it is they are missing. Figures 13 and 14 below report different online educational applications used by households with children across different demographics. The data suggests that low-income and rural households with children are lagging behind other households with children in their use of educational online tools.[19]

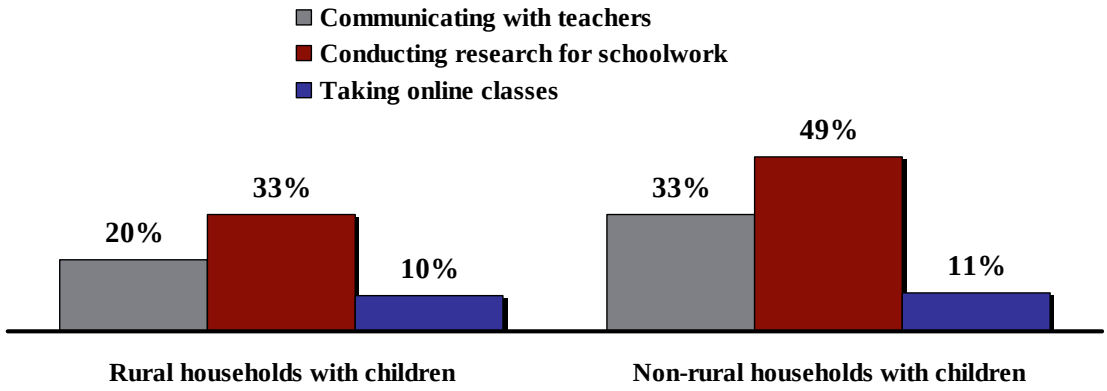
Figure 13
Use of various online educational applications among households with children



2009 Residential Technology Assessments of Ohio and Tennessee. n=858 OH and TN residents who have children living at home.

[19] Ibid, page 14.

Figure 14
Use of various online educational applications among rural households with children

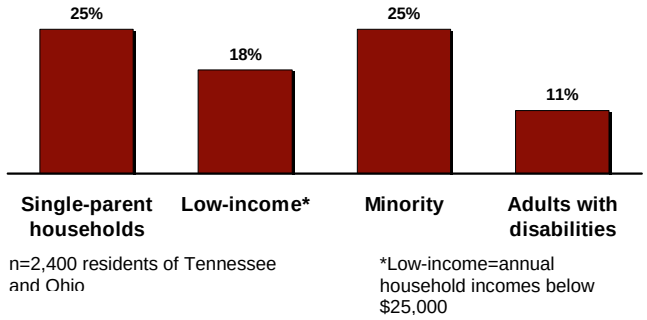


2009 Residential Technology Assessments of Ohio and Tennessee. n=858 OH and TN residents who have children living at home.

E. The Role of Libraries as Community Broadband Centers

Connected Nation's filing of October 29, 2009, contributed a discussion about the role of libraries as important – sometimes the only -means of high-speed access to the Internet among citizens who do not have the benefit of a broadband connection in the home or place of work. In 2009, Connected Nation conducted surveys to better understand the role of libraries as community technology hubs.[20] The findings indicate that libraries are vital in filling an access void in local communities where the library is most often the only source of free Internet availability. Significant percentages of those who normally don't subscribe to broadband – specifically single parents, minorities, and low-income residents – are relying on the local library as their sole or primary Internet resource: 25% of single parents, 25% of minorities, 18% of low income residents, and 11% of people with disabilities depend on libraries for Internet connections (Figure 15).[21]

Figure 15
Percent of each demographic group using the Internet at their library



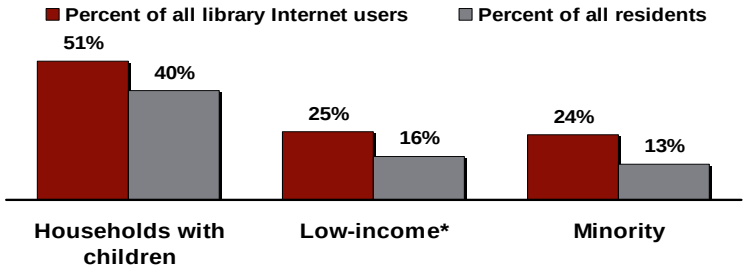
n=2,400 residents of Tennessee and Ohio

*Low-income=annual household incomes below $25,000

Source: 2009 Residential Technology Assessments in TN and OH

[20] *Connected Nation's NBP Comments – Libraries,* page 2.
[21] Ibid, page 2.

Figure 16
Percent of library Internet users compared to all residents, by demographic



n=2,400 TN and OH residents, 300 of whom access the Internet at their local library

*Low-income=annual household incomes below $25,000

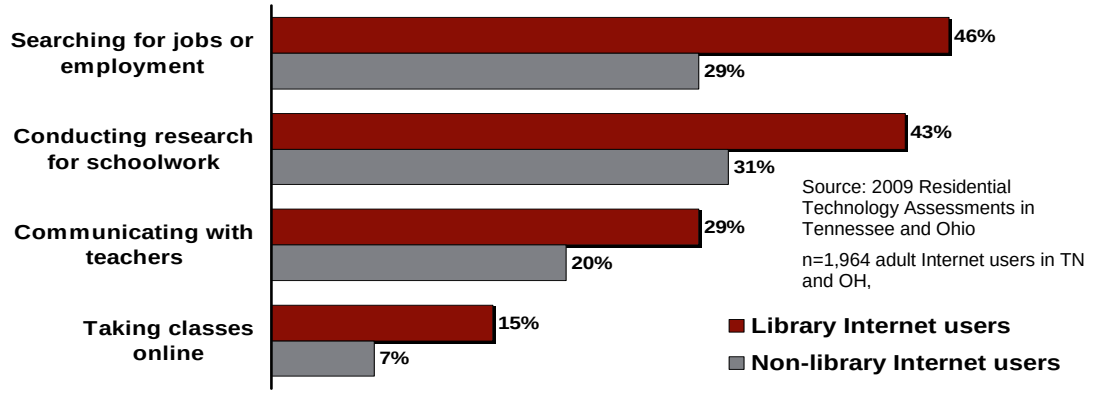
Source: 2009 Residential Technology Assessments in Tennessee and Ohio

Upon examining the demographic make-up of library Internet users, three demographic groups stand out with significantly higher representation than average. The share of Internet library users who are minority, have annual household incomes below $25,000, or who have children living at home, is each significantly larger than in the population as a whole. More than one-half (51%) of library Internet users have children at home, suggesting that a significant portion of those who use the Internet at their library are children. Further, 25% of library Internet users are low-income, and 24% represent minority populations. In all three groups, these percentages are significantly higher than in the population as a whole, suggesting that Internet access at the local library is especially important for parents and children, low-income residents, and minorities (Figure 16).[22]

Connected Nation's surveys also found that library Internet users are statistically more likely than other Internet users to employ broadband for education, workforce development, civic engagement, and communicating with healthcare professionals. The surveys found that library Internet users are more likely than other Internet users to use the Internet for improving their education and finding employment. Forty-six percent of library Internet users search for jobs online, compared to 29% of other Internet users. Library Internet users take online classes more than twice as often as other Internet users, and library Internet connections are also used frequently for completing homework and communicating with teachers (Figure 17).[23]

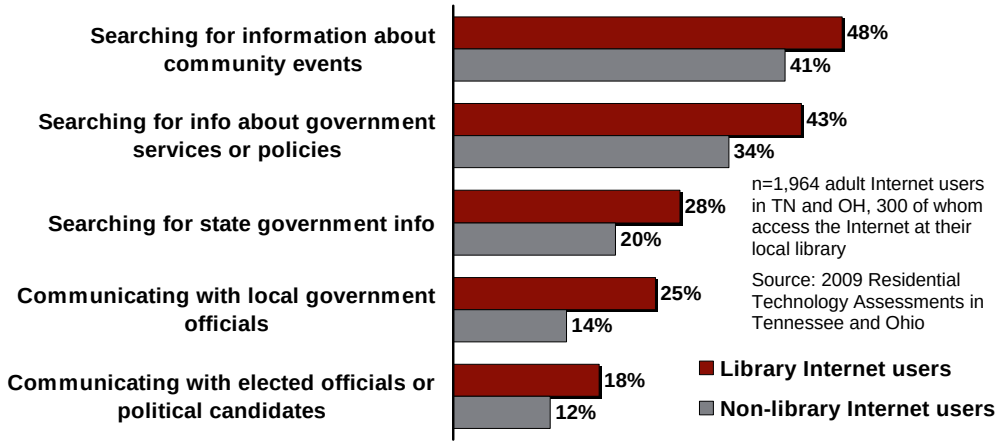
[22] Ibid.
[23] Ibid, page 4.

Figure 17
Internet users who conduct educational and workforce development activities online



Libraries are meeting an essential community need by helping community residents find work, as well as improve their job skills to increase their productivity and help provide job security. Further, library Internet users are more likely to depend on the Internet as an enabler and resource for civic engagement and information. Of particular note, library Internet users are nearly twice as likely as other Internet users to communicate online with local government officials (Figure 18).[24]

Figure 18
Internet users who engage in civic activities online



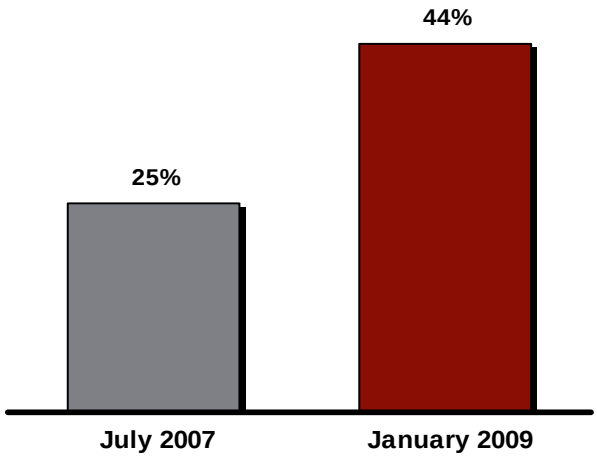
[24] Ibid, page 5.

F. E-Government Services: A Vital Tool for All Citizens

Connected Nation's filing on November 6, 2009, provided input and examples of successful state and local government initiatives, programs, and participation that have positively impacted available knowledge on broadband/technology data, broadband deployment, and the rate of household broadband adoption. In many states, including those in which Connected Nation has been an active player, state, local, and tribal governments have been a key driver in broadband improvement to date. E-government services, or the use of the Internet to access government information and services, is a vital online tool for many Americans, and one that is growing in importance as more government agencies at the local, state, and federal level provide a greater variety of online services to clients, businesses, and other governmental agencies.

Connected Nation research shows that a growing share of both residents and businesses rely on their home broadband connection to stay in touch with local, state, and federal government agencies. Research from 2009 in Tennessee showed that 44% of all Tennessee adults use their home broadband connection to conduct e-government activities (Figure 19). [25] This represents a 76% growth rate in the adoption of e-government from July 2007 when only 25% of adults used their home broadband services to access to e-government services.

Figure 19
Tennessee adults who use broadband for e-government services

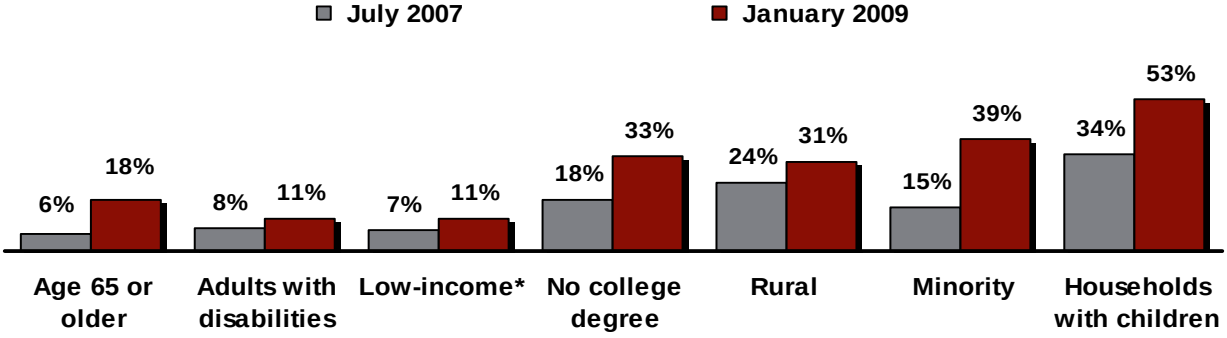


Source: July 2007 and January 2009 Tennessee Residential Technology Assessments. n=9,513 TN residents in 2007 and 1,200 TN residents in 2009. e-Government activities include contacting government officials, searching for government service and policy information, interacting with state or local government, and making online transactions with the government. January 2009 survey results were used due to a change in methodology in the way that application questions were asked in the July 2009 Connected Tennessee Residential Technology Assessment.

[25] *Connected Nation's NBP Comments – E-Gov*, page 11.

Additionally, a growing number of different demographic groups rely on their home broadband service to connect with their local, state, and federal government offices (Figure 20).[26]

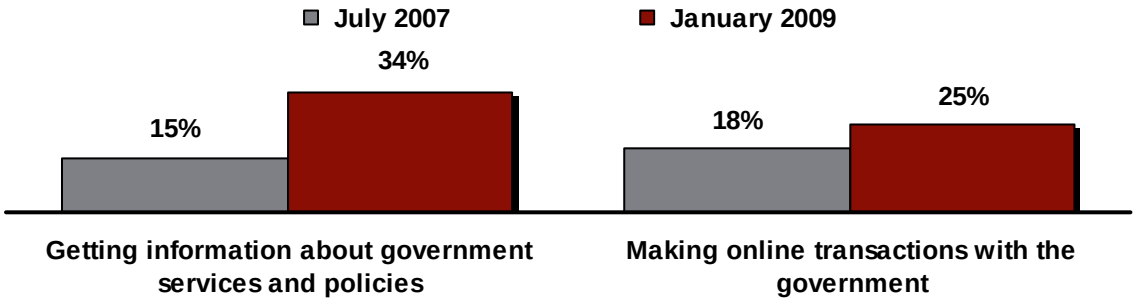
Figure 20
Percent of all Tennessee residents who use home broadband service to access e-government services



Source: July 2007 and January 2009 Tennessee Residential Technology Assessments. n=9,513 TN residents in 2007 and 1,200 TN residents in 2009. *Low-income=households where the annual household income is less than $25,000.

Consumers who access e-government services through their home broadband connection reported that they do so for a number of reasons, most of which fall into two distinct categories: using the Internet to learn about government services and policies, and conducting online transactions with government offices (Figure 21).[27]

Figure 21
Type of e-government applications accessed by Tennessee adults using a home broadband connection



Source: July 2007 and January 2009 Tennessee Residential Technology Assessments. n=9,513 TN residents in 2007 and 1,200 TN residents in 2009.

Connected Nation research shows that online access to e-government services has been growing steadily in recent years, rapidly becoming a "killer application" for broadband services: an application providing tangible value, and hence a key reason to adopt and continue using broadband access, to both citizens and the private sector. This trend should continue and be strengthened through the promotion and investment by government in these services. It is important that all levels of government continue expanding the array of e-government services provided online, as well as the

[26] Ibid, page 12.

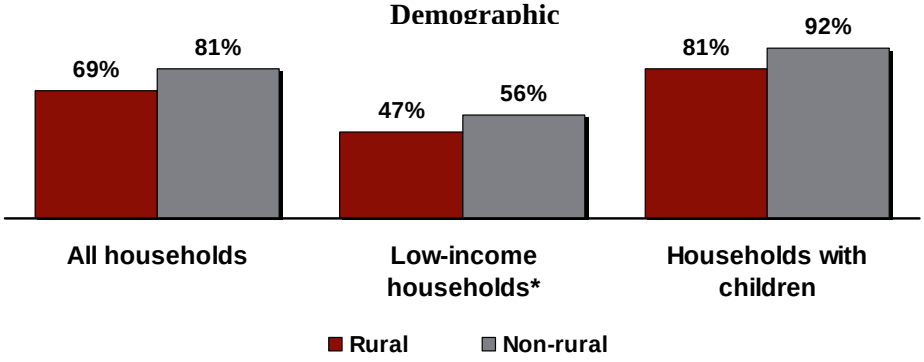
[27] Ibid, page 13.

effectiveness of online e-government platforms. Such investments will trigger greater growth in e-government services, resulting in government savings and benefits for the private sector.

G. Understanding the Rural versus Non-Rural Gap

In their joint filing in the NPB debate of December 4, 2009, the American Farm Bureau Federation and Connected Nation measured differences in adoption and usage of broadband service across rural and non-rural areas for both businesses and residential consumers.[28] Data from Connected Nation's 2009 surveys in Tennessee and Ohio show a gap across rural and non-rural households in adoption of computers and broadband. While 81% of all households in non-rural areas report owning a home computer, only 69% of rural respondents do. Similarly, 47% of rural low-income households (earning less than $25,000 annually) report owning a computer, compared to 56% of low-income non-rural households. Among households with children, computer ownership rates go up, but the rural-non-rural gap is still measurable: 81% of rural households with children report having a computer at home, compared to 92% among non-rural respondents (Figure 22).[29]

Figure 22
Computer Ownership Among Rural and Non-Rural Residents by Demographic



Q: Does your household have a computer? (n=2,400 adults in Tennessee and Ohio, 683 of whom are rural, 449 of whom are low-income, and 858 of whom have children under the age of 18 living at home)

*Low-income=households with annual household incomes below $25,000

Source: 2009 Residential Technology Assessments of Tennessee and Ohio

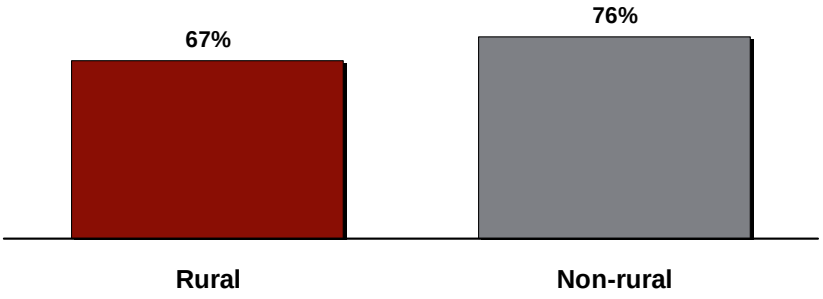
Broadband adoption trends show a similar pattern. While 64% of non-rural households report subscribing to broadband in the home, only 47% of rural households adopt the service. While 28% of low-income, non-rural households subscribe to the service, only 24% of rural, low-income homes do so. Similarly, while 76% of non-rural households with children report subscribing to broadband, only 60% of households with children in rural areas have broadband at the home.[30]

Importantly, this adoption lag in rural areas cannot be explained in full by a supply-side or network infrastructure gap. Figure 23 compares "take rates," or the percentage of broadband subscribers relative to all households that have broadband available to them (including those that report subscribing to broadband and those who do not subscribe but report having broadband available at

[28] *Connected Nation's NBP Comments – Rural.*
[29] Ibid, page 3.
[30] Ibid, page 4.

their homes), across rural and non-rural areas in Ohio and Tennessee. The data show that while 76% of non-rural dwellers with broadband access choose to subscribe to the service, only 67% of rural dwellers that have broadband access subscribe. This represents a significant gap that illustrates the demand-side challenge facing rural America.[31]

Figure 23
Broadband "Take Rates" Among Rural and Non-rural Residents Who Report Having Broadband Available*



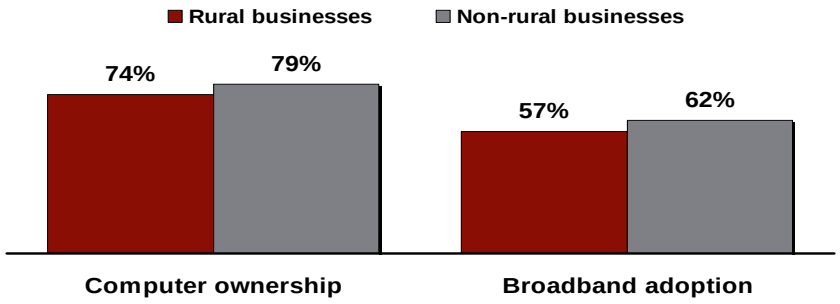
Q: Which of the following describe the type of Internet service you have at home? (Broadband, Dial-up, None, Don't Know)
(n=1,435 adults in Tennessee and Ohio who either subscribe to home broadband service or report that broadband is available where they

*"Take rates" = (% of home broadband subscribers) / (%of residents who EITHER subscribe to home broadband service OR report that broadband service is available where they live)

Source: 2009 Residential Technology Assessments of Tennessee and Ohio

Technology adoption trends among businesses also measure a demand-side gap across rural and non-rural areas. Figure 24 indicates that, in 2009 in Tennessee and Ohio, 74% of rural businesses report owning a computer, compared to 79% among non-rural businesses. Broadband adoption among rural business lags behind, at 57%, compared to adoption rates of 62% among non-rural businesses.[32]

Figure 24
Computer Ownership and Broadband Adoption among Businesses in Tennessee and Ohio



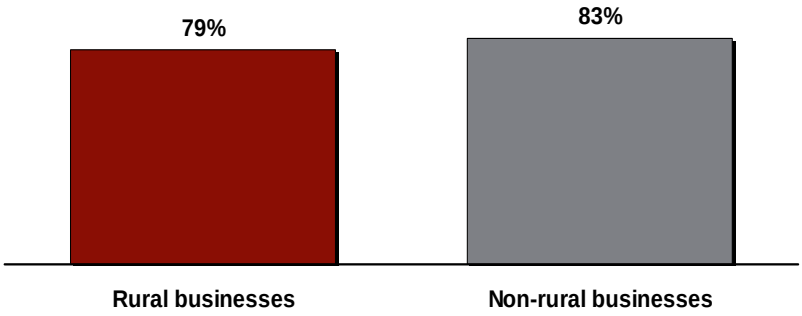
Q: Does your company use any type of computer technology to handle some or all of its business functions? And
Q: Which of the following describes the type of Internet access your company has? (n=1,609 businesses in TN and OH)

Source: 2009 Business Technology Assessments of Tennessee and Ohio

[31] Ibid.
[32] Ibid, page 6.

As was the case among residential consumers, this gap in broadband adoption is not fully explained by a lack of available broadband service. Among businesses that have service available, "take rates" differ across rural and non-rural businesses. Figure 25 indicates "take rates" of 79% for rural businesses compared to 83% among businesses in non-rural areas.[33]

Figure 25
Broadband "Take Rates" among Rural and Non-rural Businesses That Report Having Broadband Available*



Q: Which of the following describes the type of Internet access your company has? (Broadband, Dial-up, None, Don't Know) (n=1,306 businesses in Tennessee and Ohio, 326 of which are rural, that either subscribe to broadband service or report that broadband is available at their location)

*"Take rates" = (% of broadband subscribers) / (%of businesses who EITHER subscribe to broadband service OR report that broadband service is available at their location)

Source: 2009 Business Technology Assessments of Tennessee and Ohio

These findings suggest that the lag in the adoption of broadband services among rural dwellers is real and cannot be explained solely due to the remaining gaps in infrastructure availability; that is, supply-side factors. Demand-side barriers to technology adoption and usage are a significant factor affecting this technology lag among rural populations. The National Broadband Plan should address both challenges simultaneously by subsidizing network build-out where private investment is unlikely to flow and by addressing demand-side barriers to adoption with measures aimed at building awareness about the benefits of broadband services for rural businesses and dwellers, expand digital literacy programs, promote computer ownership, and strengthen rural community anchor institutions' broadband capacity and services.[34]

H. Businesses: The Relationship Between Broadband and the Economy

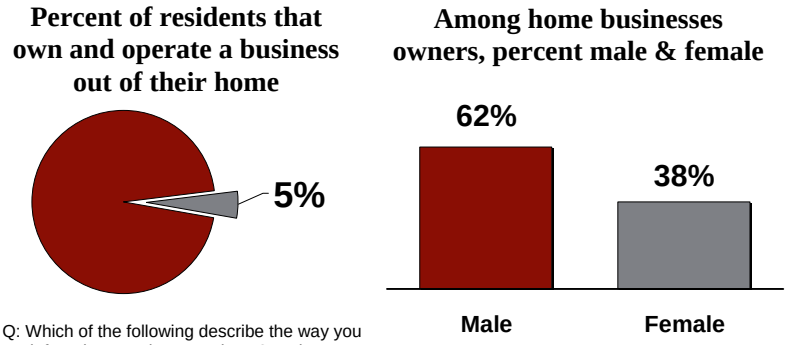
On December 11, 2009, Connected Nation filed comments on the relationship between broadband and economic opportunity and its impact on businesses.[35] Our research illustrated that adoption patterns across businesses in different sectors can greatly vary. While 61% of all businesses surveyed adopt broadband service, different adoption patterns exist across different sectors. Businesses within the high-tech sector are the most likely to adopt broadband (78%), followed by Professional and Financial Services (76%), the Manufacturing sector (72%), and Wholesale and Transportation (64%). The sectors least likely to subscribe to a broadband connection are Healthcare (43%), Agriculture,

[33] Ibid.
[34] For a more in depth discussion of policy options concerning the Rural Broadband Strategy see *Comments of Connected Nation, Inc., FCC GN Docket No. 09-29*, March 25, 2009, available at http://fjallfoss.fcc.gov/ecfs/document/view?id=6520203594 .
[35] *Connected Nation's NBP Comments – Economy.*

Mining, Construction and Utilities (AMCU, 50%), and Retail, Recreation, Food and Lodging (Retail & Hosp, 56%).[36]

Data from Tennessee and Ohio collected pertaining to home-based business ownership shed light into varying patterns of usage and adoption by male and female home-based business owners. Figure 28 shows that 5% of all adults surveyed report being home business owners. Of these, 62% are male and 38% are female (Figure 26).[37]

Figure 26

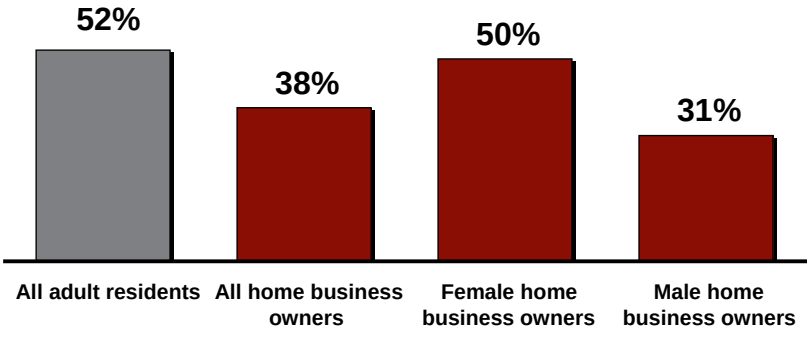


Q: Which of the following describe the way you work from home, when you do so? And
Q: Gender
(n=2,400 TN & OH residents) And
(n= 133 TN & OH residents that own and operate a business out of their home)

Source: July 2009 Connected Tennessee® and 2009 Connect Ohio ® Survey of Businesses

Home business owners on average are less satisfied with the speed of their broadband delivery than the average home broadband subscriber. While 52% of all home broadband subscribers are very satisfied with their broadband speeds, only 38% of home business owners are. Furthermore, female home business owners appear to be more satisfied than their male counterparts. Half of female home business owners report being very satisfied with their connection, compared to 31% of their male counterparts (Figure 27).[38]

Figure 27
Home business owners who are "very satisfied" with the speed of their broadband delivery



Q: To the best of your knowledge, what is the approximate download speed
or bandwidth provided by your Internet service provider?
(n= 1,383 TN & OH residents with a broadband connection at home)

Source: July 2009 Connected Tennessee® and
2009 Connect Ohio ® Residential Survey

[36] Ibid, page 4.
[37] Ibid, page 5.
[38] Ibid, page 12.